



From the Desk of...

## 70<sup>th</sup> Birthday!

**by Donald E. Bently**  
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**O**n my 70th birthday, I was in Washington D.C. presenting a special seminar to a U.S. government research group. Completely unknown to me, Agnes Muszynska and Roger Harker had planned a big surprise birthday party for me at the home of Roger and Sheryl Harker. This was two days before my planned departure to Washington and it caught me completely by surprise, except that I did have enough premonition to wear a suit and tie. The party was fantastic, and the special present was a book containing stories about me from customers, suppliers, co-workers, fellow consultants, researchers, ranchers and other business people from the community. There were people at the party from as far away as Ontario, Canada, Pennsylvania, Ohio and Florida. It was a fun, fantastic party.

Exactly eight years ago, I retired from my job as president of Bently Nevada Corporation. I did this to ensure that the organization remained fresh and open to incoming paradigm shifts. I had run the company for thirty-two years, and that was necessary, sufficient and enough.

I picked up my desk and moved across the street to join the Bently Rotor Dynamics Research Corporation (BRDRC), to do research, consult and teach rotor dynamics. However, I did retain my less-demanding job as Chairman of the Board of Directors of Bently Nevada Corporation. At that time, Dr. Agnes Muszynska had already been with BRDRC for more than five years.

I have been pleased to see how well Bently Nevada Corporation has done without my everyday supervision. It passed its very first ISO 9000 audit with an excellent score. This unannounced audit occurred three years ago when Agnes and I were lecturing at the Qinghua University, Beijing, the People's Republic of China, as part of a United Nations contract. Probably, if I had been at the plant, we would have failed that ISO audit.

There have been very powerful leaders who leave a perfect vacuum when they move on. I could name several leaders, each from an industry, university or the military, who performed very well as managers, except that all of their disciples were trained only to follow, and, therefore, could not lead or introduce any new paradigms. In fact, such disciples often fight against new paradigms. I was pleased to see that this did not happen at Bently Nevada.

Meanwhile, at BRDRC we have made large strides in advancing vibrational diagnostics of machinery, such as:

1. Early warning of rotor cracking in order to prevent machinery failure.
2. Major improvements in understanding and modeling fluid-induced instabilities in bearing/seal systems (even though the rotor dynamics theorists still insist that fluid circumferential flow-related resonance does not exist and that the fluid circumferential average velocity ratio is constant and equal to one half, although their own work suggests different conclusions).
3. Steady improvement in the measurement of the dynamic stiffnesses of rotating machines. I call all acceleration, velocity and displacement motion characteristics of shaft and housing **simply ratios**. This is a deliberate overstatement to improve the way vibration is thought about. All vibrational motions are the result of the input force divided by the observed dynamic stiffness. If you want to be complete, however, you must add, "and all angular vibrations are the result of a dynamic moment (pair of forces) divided by the observed angular dynamic stiffness."

The reason for watching more than vibration is not **only** for Bently Nevada to sell more products. It is because, in order to control your machine, you have great need to know whether the forces are too high or the stiffness is too weak.

Our product introduction has been good, and our products have generally been well-received by our customers. We should have watched the "balance of plant" monitoring more carefully, but product development has become a company-wide

process. Each functional area has been put on an equal footing, to mesh the customer's needs and wants with technology and business processes that provide the best value. The result has been products that provide more value through increased functionality and reduced price.

Sales efforts, always a challenge in the global marketplace, have improved. Programs, like the three-month-long comprehensive sales training course, have significantly improved the ability of our sales force to help our customers.

The technology used by Technical Training has evolved from an overhead foil presentation technology to multimedia presentations that use animated graphics to present concepts in a clear, concise, and efficient manner.

Manufacturing has evaluated its core competencies and has invested in areas that distinguish us from our competitors. The chemical processes involved in making printed circuit boards have been outsourced (manufactured elsewhere), and the available facilities and resources were used to build a state-of-the-art transducer facility.

To be sure, the journey is not done. We have just started to transform our accounting system from an external reporting perspective to add more emphasis on the information needed internally to operate our business.

We have built many partnerships, both as consumers and as suppliers. We are contributing land, so a new satellite campus of the local community college can be built in Minden. This will benefit the community and make it easier for Bently Nevada employees to continue their education.

Bently Nevada has changed from a somewhat global company to a much more global corporation, not only in sales and service, but also in the attitudes of its employees at all levels.

It has been great, and I am looking forward to continued progress in the working knowledge of rotating and reciprocating machinery and in supplying our customers with the instrumentation they need to help them monitor and control their machines. ■